MOBILE TERMINAL USING FLEXIBLE DISPLAY AND METHOD OF CONTROLLING THE MOBILE TERMINAL

CROSS-REFERENCE TO RELATED APPLICATION

This application claims the priority benefit of Korean Patent Application No. 10-2008-0111151, filed on Nov. 10, 2008 in the Korean Intellectual Property Office, the disclosure of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a mobile terminal and a method of controlling the mobile terminal, and particularly, to a mobile terminal and a method of controlling the mobile terminal which can control various operations performed by the mobile terminal using a flexible display.

2. Description of the Related Art

Mobile terminals are portable devices, which can provide users with various services such as a voice calling service, a video calling service, an information input/output service, and a data storage service.

As the types of services provided by mobile terminals diversify, an increasing number of mobile terminals have been equipped with various complicated functions such as capturing photos or moving pictures, playing music files or moving image files, providing game programs, receiving broadcast programs and providing wireless Internet services and have thus evolved into multimedia players.

Various attempts have been made to realize such complicated functions as hardware devices or software programs. For example, various user interface (UI) environments, in which users are allowed to easily search for and choose desired functions, have been developed. In addition, the demand for various designs for mobile terminals such as a double-sided liquid crystal display (LCD), a flexible display, or a full touch screen has steadily grown due to a growing tendency of considering mobile terminals as personal items that can represent personal individuality.

Flexible displays are display devices that are flexible enough to be folded or rolled up. However, the benefits of the flexibility of flexible displays have not yet been proven.

Therefore, it is necessary to develop ways to effectively input data to or output data from a mobile terminal equipped with a flexible display using the flexibility of the flexible display and thus to efficiently control the operation of the mobile terminal.

SUMMARY OF THE INVENTION

The present invention provides a mobile terminal and a method of controlling the mobile terminal which can control various operations performed by the mobile terminal according to whether a flexible display is bent or folded.

According to an aspect of the present invention, there is provided a method of controlling a mobile terminal equipped with a flexible first display module and a second display module capable of receiving a touch input, the method including displaying an operating screen on the first display module and displaying an operation control menu on the second display module; determining whether the first display module is bent or folded; and choosing one of a plurality of menu items of the operation control menu corresponding to a bent or folded portion of the first display module.

According to another aspect of the present invention, there is provided a mobile terminal including a first display module configured to be flexible and display an operating screen; a second display module configured to be able to receive a touch input and display an operation control menu; a sensing unit configured to determine whether the first display module is bent or folded; and a controller configured to choose one of a plurality of menu items of the operation control menu corresponding to a bent or folded portion of the first display module based on data provided by the sensing unit.

According to another aspect of the present invention, there is provided a method of controlling a mobile terminal equipped with a flexible first display module and a second display module capable of receiving a touch input, the method including displaying an operating screen corresponding to a current operating mode on the first display module; and if the first display module is bent or folded, displaying an operation control menu that can be executed in the current operating mode on the second display module.

According to another aspect of the present invention, there is provided a mobile terminal including a first display module configured to be flexible and display an operating screen corresponding to a current operating mode; a second display module configured to be able to receive a touch input; a sensing unit configured to determine whether the first display module is bent or folded; and a controller configured to display an operation control menu that can be executed in the current operating mode on the second display module if data provided by the sensing unit indicates that the first display module is bent or folded.

According to another aspect of the present invention, there is provided a method of controlling a mobile terminal equipped with a flexible first display module and a second display module capable of receiving a touch input, the method including displaying a first operating-mode screen on the first display module; if the first display module is bent or folded, displaying a second operating-mode screen on the second display module; and if the first display module is unbent or unfolded, displaying the second operating-mode screen on the first display module.

According to another aspect of the present invention, there is provided a mobile terminal including a first display module configured to be flexible and display a first operating-mode screen; a second display module configured to be able to receive a touch input; a sensing unit configured to determine whether the first display module is bent or folded; and a controller configured to display a second operating-mode screen on the second display module if data provided by the sensing unit indicates that the first display module is bent or folded, and display the second operating-mode screen on the first display module if data provided by the sensing unit indicates that the first display module is unbent or unfolded.

According to another aspect of the present invention, there is provided a method of controlling a mobile terminal equipped with a flexible first display module and a second display module capable of receiving a touch input, the method including displaying an operating screen including an operation control menu on the first display module; if the first display module is bent or folded, displaying the operation control menu on the second display module by scrolling the operation control menu; and if one of a plurality of menu items of the operation control menu is chosen by being touched, performing an operation corresponding to the chosen menu item.

According to another aspect of the present invention, there is provided a mobile terminal including a first display module configured to be flexible and display an operating screen